Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Endeavour Operating Corporation
Well Name/Number: State 16-13-35 #1
Location: NE NW Section 16 T13N R35E
County: Garfield **, MT; Field (or Wildcat)** W/C

Air Quality

(possible concerns)
Long drilling time: No, 10 to 15 days drilling time.
Unusually deep drilling (high horsepower rig): No, a double drilling rig to drill to 4,800' TD Otter Formation vertical well test.
Possible H2S gas production: Slight H2S possible.
In/near Class I air quality area: No class I air quality area.
Air quality permit for flaring/venting (if productive) Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
_X_ Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: No special concerns – using triple drilling rig to drill to 4,800' TD

Water Quality

(possible concerns)

Salt/oil based mud: No, surface hole will be drilled with freshwater. Main hole will be drilled with freshwater and freshwater drilling mud.
High water table: Possible high water table in the area of review.
Surface drainage leads to live water: No, closest drainage is Indian Creek, an ephemeral drainage, about 1/8 of a mile to the northeast from this location. About 3/8 of a mile to the southeast from this location is a stock pond within Indian Creek.
Water well contamination: Closest water well is about 1.5 miles to the northeast from this location. Depth of this stock water well is 40'. This well will set 9 5/8" surface casing to 3500' and cement to surface. Well will be drill with freshwater based drilling fluids from base of surface casing to 4,800'TD, into the Otter Formation.
Porous/permeable soils: No, silty "Gumbo" clay soils.
Class I stream drainage: No Class I stream drainages.

Mitigation:
_X_ Lined reserve pit
_X_ Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____

Comments: Freshwater mud system to be used on surface hole. Freshwater mud system to be used out from under surface casing to 4,800'. Fluids will be

evaporated in the lined reserve pit. Pit will be backfilled with at least 4' of cover. No concerns.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No live water stream crossings. Crossing only ephemeral drainages.
High erosion potential: No, small cut, up to 1.8' and small fill, up to 1.4', required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, a large location, 300X550' size required.
Damage to improvements: Slight, surface use is grass grazing land w/alkali at the surface.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
X Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be from existing county road, Gregg Road and existing ranch trail, About 9533' upgrading of existing ranch trail and new road will be constructed into this location. Freshwater drill cuttings and mud solids will be buried in the lined pit. Lined pit will backfilled with 4' of cover when dry. Drilling fluids will be evaporated. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No residences within 1 mile of this location.
Possibility of H2S: Yes, possible.
Size of rig/length of drilling time: Double derrick drilling rig, about 10 to 15 days drilling time.

Mitigation:
X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Operational BOP and adequate surface casing should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species identified are the Pallid Sturgeon, Piping Plover, Interior Least Tern and the Black Footed Ferret. Candidate species is the Greater Sage Grouse and Sprague's Pipit. NH tracker website lists the following "Species of Concern" in T13N R35E: Black-Tailed Prairie Dog, Great Blue Herron, Greater Sage Grouse and Greater Short Horned Lizard.

Mitigation:

__ Avoidance (topographic tolerance/exception)

X Other agency review (DFWP, federal agencies, DSL)

__ Screening/fencing of pits, drillsite

__ Other:_____

Comments: State Trust Land grass surface lands used for grazing. DNRC Trust Lands will do surface EA.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

__ avoidance (topographic tolerance, location exception)

__ other agency review (SHPO, DSL, federal agencies)

__ Other:_____

Comments: Trust Land grass surface lands used for grazing. DNRC Trust Lands will do surface EA.

Social/Economic

(possible concerns)

__ Substantial effect on tax base

__ Create demand for new governmental services

__ Population increase or relocation

Comments: Well is a wildcat, until production is established no social or economic impact can be assessed.

Remarks or Special Concerns for this site

Well is a wildcat 4,800'TD Otter Formation vertical well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: August 3, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website
(Name and Agency)
Garfield County water wells
(subject discussed)
July 29, 2011
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Garfield County
(subject discussed)

July 29, 2011
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T13N R35E
(subject discussed)

July 29, 2011
(date)

DNRC "Trust Lands" Division, Mr. Trevor Taylor
(Name and Agency)

Greater Sage Grouse Leks in "Trust Lands" section 16 T13N R35E
(subject discussed)

If location was inspected before permit approval:
Inspection date: _____
Inspector: __ _____
Others present during inspection: __ _____